

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 June 2003 (05.06.2003)

PCT

(10) International Publication Number
WO 03/046672 A2

(51) International Patent Classification⁷: **G05B 19/4097**

(21) International Application Number: **PCT/GB02/05219**

(22) International Filing Date:
20 November 2002 (20.11.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0127941.3 21 November 2001 (21.11.2001) GB

(71) Applicant (*for all designated States except US*):
PROPHET CONTROL SYSTEMS LIMITED
[GB/GB]; Manorway House, The Manorway, Stan-
ford-Le-Hope, Essex SS17 9PS (GB).

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): **READ, Dale**
[GB/GB]; Cimac, Manorway House, The Manorway,
Stanford-Le-Hope, Essex SS17 9PS (GB).

(74) Agent: **HOWDEN, C., A.**; Forrester Ketley & Co., For-
rester House, 52 Bounds Green Road, London N11 2EY
(GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US,
UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK,
TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished
upon receipt of that report*

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: 3D VIRTUAL MANUFACTURING PROCESS

(57) **Abstract:** A method of is disclosed of checking the feasibility or other properties of a process involving movement and/or assembly of items or components. The method comprises setting up, within a computer, in terms of corresponding sets of data, a virtual three-dimensional space and, in such space, virtual versions of the items or components concerned, represented by corresponding sets of data, and operating a program in the computer so as to manipulate the virtual items or components in that virtual space. The method makes it possible to determine, by operation of the computer, potential difficulties in manipulating corresponding real items or components in real space. The method can be used to set up, within a computer, a virtual factory in virtual manufacturing premises with dimensions corresponding to the real premises available, with virtual machinery with data as to dimensions, to positioning, movement and timing of such machinery, and virtual personnel with corresponding data as to dimensions, limits of safe movement, speed of movement and the like. It is thus readily possible to adjust the data which is variable, and thus represents degrees of freedom, to arrive at an efficient workable arrangement.

WO 03/046672 A2